



STATEMENT OF BASIS
HANGAR U
SOLID WASTE MANAGEMENT UNIT NO. 48
45TH SPACE WING
CAPE CANAVERAL AIR FORCE STATION
BREVARD COUNTY, FLORIDA



PURPOSE OF STATEMENT OF BASIS

This Statement of Basis (SB) has been developed in order to inform the public and give the public an opportunity to comment on a proposed remedy to clean up contamination at Hangar U. A 45th Space Wing (45th SW) installation restoration partnering (IRP) team consisting of United States Air Force (USAF), United States Environmental Protection Agency (USEPA), Florida Department of Environmental Protection (FDEP), the U. S. Army Corps of Engineers, and various consultants have determined that the proposed remedy is cost effective and protective of human health and the environment. However, prior to implementation of the proposed remedy, the 45th SW IRP team would like to give an

Brief Site Description

Hangar U is located in the CCAFS Industrial Area (See Figure 1). The facility was constructed in 1957 and has been used for vehicle maintenance, launch vehicle hardware assembly, and storage.

team will evaluate all comments and issues raised in the comments and determine if there is a need to modify the proposed remedy prior to implementation.

WHY IS CLEANUP NEEDED?

The results of the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) indicated that Aroclor 1260, a polychlorinated biphenyl (PCB), and benzo(a)

pyrene, a polynuclear aromatic hydrocarbon (PAH), are present in site soils at levels that could be potentially harmful to human health. Additional information is provided in Table 1. Additionally, several volatile organic compounds (VOCs) are present in the groundwater at levels that could be potentially harmful to human health. Additional investigation and remediation of the groundwater was deferred to another site (Hangar K, SWMU No. 22), which was identified as the source of the groundwater contaminant plume.

HOW DO YOU PARTICIPATE?

The 45th SW IRP team solicits public review and comment on this SB prior to implementation of the proposed remedy as a final remedy. The final remedy for Hangar U will eventually be incorporated into the Hazardous and Solid Waste Amendments (HSWA) Permit for Cape Canaveral Air Force Station (CCAFS).

The Clean-up Remedy

The proposed clean-up remedy for Hangar U includes (but is not limited to) the following components:

- Implementation of land use controls designed to prevent exposure to site contaminants. These include:
 - Prohibition of residential development
 - Prohibition of groundwater as a drinking water source, pending additional investigation under SWMU No. 22
 - Posting warning signs on-site

A complete list of land use controls and other protective measures are found in the Hangar U Land Use Control Implementation Plan (LUCIP).

The public comment period for this SB and the proposed remedy will begin on the date that a notice of the SB's availability is published in a major local newspaper of general circulation. The public comment period will end 45 days thereafter. If requested during the comment period, the 45th SW IRP team will hold a public meeting to respond to any oral comments or questions regarding the proposed remedy. To request a hearing or provide comments, contact the following person in writing within the 45-day comment period:

Mr. Jorge Caspary
FDEP-Bureau of Waste Cleanup
2600 Blair Stone Road, MS-4535
Tallahassee, FL 32399-2400
E-mail: Jorge.Caspary@dep.state.fl.us
Telephone: (850) 921-9986

The HSWA Permit, the SB, and the associated Administrative Record, including the RFI Report, will be available to the public for viewing and copying at:

Environmental Management, CEV/ESC
Facility 1638, Samuel Phillips Parkway
Cape Canaveral Air Force Station, FL
For public access call (321) 853-0965

This information can also be found on-line at
http://www.mission-support.org/45SW_IRP_EA

The HSWA Permit, the SB, and Hangar U Report summaries will be available for viewing and copying at:

Central Brevard Library
308 Forrest Avenue
Cocoa, FL, 32922

To request further information, you may contact one of the following people:

Ms. Teresa Green
Environmental Restoration Element Chief
45 CES/CEVR
1224 Jupiter Street

Patrick Air Force Base, FL 32925-3343
E-mail: teresa.green@patrick.af.mil
Telephone: (321) 853-0965

Mr. Jorge Caspary
See previous contact information

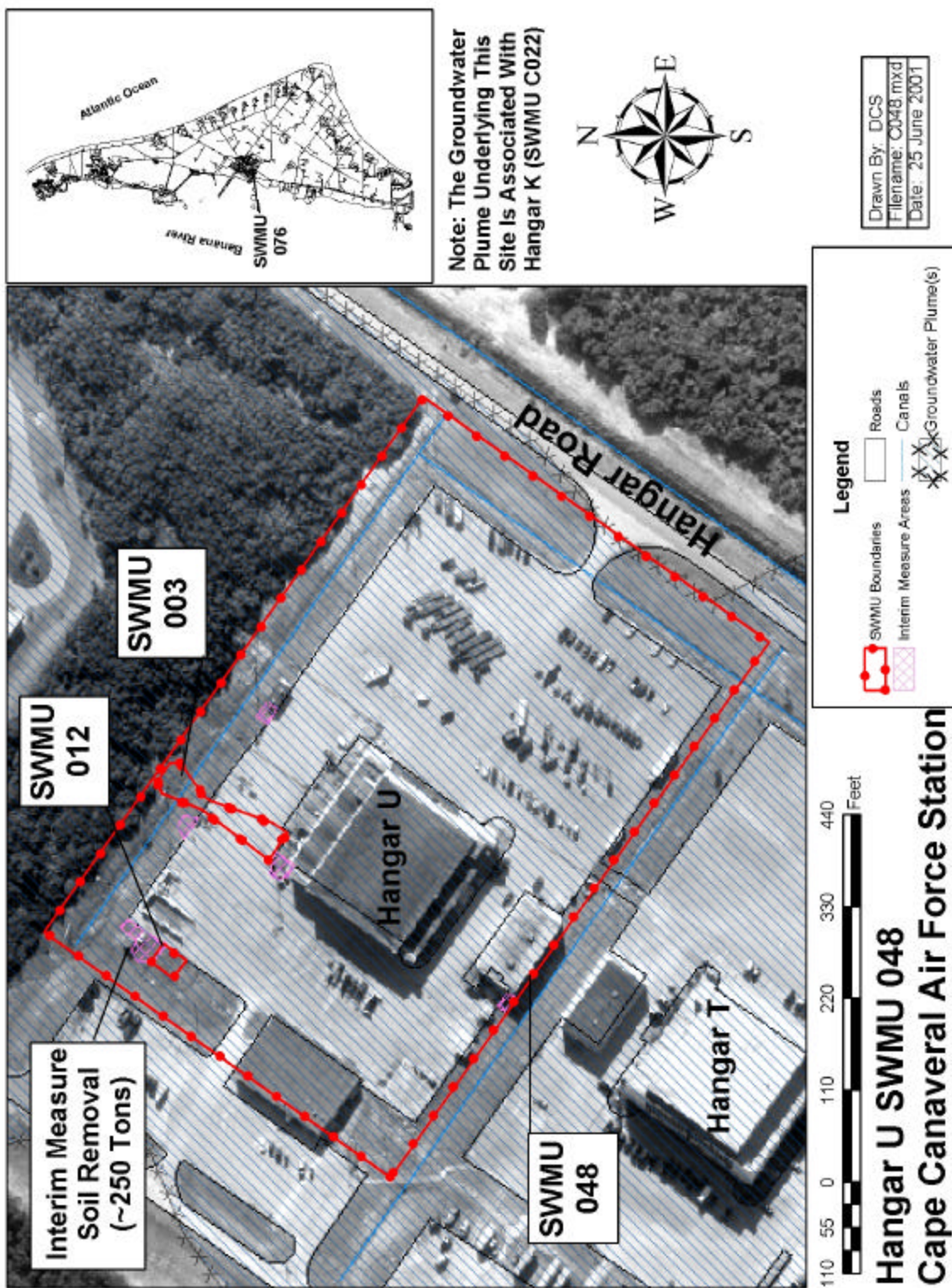
Mr. Timothy R. Woolheater, P. E.
EPA Federal Facilities Branch
Waste Management Division
Sam Nunn Atlanta Federal Center
61 Forsyth Street
Atlanta, GA 30303-8960
E-mail: woolheater.tim@epamail.epa.gov
Telephone: (404) 562-8510

FACILITY DESCRIPTION

USAF established the 45th SW as the primary organization for the Department of Defense aerospace force programs. Historically, the National Aeronautics and Space Administration (NASA) also performed space launch related operations on the 45th SW property. These operations have involved the use of toxic and hazardous materials. Under RCRA and the HSWA Permit (CCAFS Permit No. FL2800016121) issued by the USEPA, the 45th SW was required to perform an investigation to determine the nature and extent of contamination from Solid Waste Management Unit (SWMU) No. 48, Hangar U.

SITE DESCRIPTION AND HISTORY

Hangar U is located on Hangar Road in the Industrial Area of CCAFS (See Figure 1). Hangar U was originally constructed in 1957 for use as a Guided Missile Assembly Building, and operated directly by the USAF. Launch vehicle related hardware was assembled at the site. After a few years, Douglas Aircraft assumed management responsibilities at the site. Following conclusion of launch related activities, the site was briefly used as a base supply storage building until the early 1970's. The site has been operated as a vehicle maintenance facility since 1976 by the base support contractor.



In accordance with RCRA Section 7004(b), this Statement of Basis summarizes the proposed remedy for CCAFS Hangar U. For detailed information, consult the Hangar U RFI Report which is available for review at the 45th SW Environmental Management Office (See "How Do You Participate") or on-line at http://www.mission-support.org/45SW_IRP_EA.

Steam cleaning operations at Hangar U were used to remove oils, dirt, and grease from vehicles. The cleaning was conducted outdoors on asphalt pavement, on the north side of Hangar U. After 1977, the waste fluids were disposed off-site, by contract.

The USAF has conducted the following investigations:

- 1990-1992: A Preliminary Assessment including records search, site reconnaissance, and interview with knowledgeable aerospace personnel identified 11 areas of concerns which warranted further investigation. A Site Investigation (SI) was recommended to collect and analyze the site's environmental media (soil and groundwater) to evaluate the presence or absence of contamination.
- 1992-1995: The SI report concluded that the presence of constituents in soil and groundwater might pose a risk to human health and the environment. The SI recommended that an RFI be conducted to assess the nature and extent of the contamination present at the site, and perform risk assessments to determine if the contamination is detrimental to human or ecological health.
- 1998: An Interim Measure (IM) was performed to remove petroleum- and metal-contaminated soil. The clean-up action resulted in the removal of approximately 178 cubic yards (250 tons) of site soils containing potentially unsafe levels of contaminants.
- 1997-1999: An RFI was performed, detailing the sampling and analysis of the site soil and groundwater. These results were used to determine human health and ecological risks. The Human Health Risk Assessment (HHRA) indicated that potential risk may be associated with the site soil. During the RFI the 45th SW IRP team decided to assess and document Hangar U's

groundwater concerns under another SWMU, Hangar K Area (SWMU 22). The Ecological Risk Assessment indicated that no unacceptable ecological risk is present at the site.

SUMMARY OF SITE RISK

As part of the RFI activities, an HHRA and an ERA were conducted to estimate the health and environmental risks associated with the site-specific contamination. The risk assessments were performed in accordance with risk management decision processes established by the USEPA, FDEP, and the USAF at the time the RFI was initiated.

The Chemicals of Concern (COCs) identified for human health during the RFI were:

- Soil: aroclor 1260 and benzo(a)pyrene

Surface water and sediment features were not present on the site, and were therefore not evaluated as a source of potential human health or ecological risk. A soil removal was performed based on initial RFI data. The goal of this removal was to reduce potential human health risk. Remaining soils pose a potential unacceptable risk under the hypothetical future adult and child resident scenarios. Potential risk from soil exposure exceeded the one in one million (1/1,000,000) cancer threshold for these potential receptors. The major contributors to risk were aroclor 1260 and benzo(a)pyrene. During the risk management decision process, aroclor 1260 was determined not to pose an unacceptable risk. The factors supporting this decision included: the conservative nature of the risk assessment, risk associated with aroclor 1260 barely exceeded the cancer threshold value, and all remaining aroclor 1260 concentrations are less than the site-specific cleanup level established during the RFI (0.6 mg/kg).

Groundwater data was collected at Hangar U and it was determined that, although groundwater contaminants exceed MCLs at the site,

these contaminants are associated with a plume emanating from another Site (SWMU No. 22, Hangar K). Based on this conclusion, a groundwater human health risk assessment was not performed for Hangar U. Risk and final remedial options associated with groundwater are being addressed under SWMU No. 22 for the plume as a whole. It will be necessary to restrict contact with and use of groundwater underlying Hangar U until a remedy for the plume as a whole is determined by the Hangar K investigation.

The ERA was conducted to evaluate the possibility that land organisms (eco-receptors) may be at risk from site-related contaminants. The ERA was based on laboratory analyses of soil samples. Groundwater was not evaluated in the ERA as there is no identified exposure pathway.

The ERA concluded that potential risk from the exposure to and/or ingestion of soil by eco-receptors is marginal. Several factors mitigate the potential concern. These could include routine facility operation and maintenance activities, less than optimal habitat found within facility boundaries, and the extent of the eco-receptor's normal foraging area.

WHAT ARE THE CLEANUP OBJECTIVES AND LEVELS?

The remedial action objectives (RAOs) are to:

- 1) Protect humans from exposure to shallow groundwater and prevent consumption of groundwater from the shallow aquifer (until a groundwater remedy is developed for the Industrial Area as a whole, under SWMU No. 22); and
- 2) Prevent unacceptable human contact with site soils.

Table 1 lists the COCs present in soil at the Hangar U site. The first column lists the chemical name, the second column lists the maximum concentration detected in the impacted medium at Hangar U during the RFI, and the last column presents the clean-up level to be achieved at the site.

Please note that through the risk management decision process, aroclor 1260 was determined not to pose an unacceptable risk (See "Summary of Site Risk") and is therefore not addressed by the remedial action. Additionally, groundwater will be investigated and remediated under SWMU No. 22, where the contamination is believed to have originated. Therefore, groundwater contaminants are not included in Table 1.

TABLE 1—CLEANUP GOALS

Site-Related Chemicals of Concern (COCs)	Maximum Detected Concentration (mg/kg)	Site-Specific Clean-up Level ¹ (mg/kg)
SOIL		
Benzo(a)pyrene	0.29	0.1

¹ Cleanup Level represents the most stringent value among USEPA and FDEP criteria at the time of the final investigation

CLEANUP ALTERNATIVES FOR HANGAR U

Clean-up alternatives are different combinations of plans to restrict site use and to contain, remove, and/or treat contamination in order to protect public health and the environment. Only two alternatives were considered because of low levels of contamination present at the Hangar U. The clean-up alternatives considered for the Hangar U are summarized below.

No Action: Evaluation of the No-Action alternative is used as a basis for comparison with other alternatives. Under this alternative, no remedial action would be taken to reduce human health risks or restrict site use. It was determined this alternative would not attain the RAOs.

Land Use Controls: Under this alternative, the 45th SW would implement site-specific land use controls to protect against exposure to contaminated soils and shallow groundwater and to prevent consumption of shallow ground-

water. Additional investigation, remediation, and monitoring of groundwater will be conducted under SWMU No. 22, Hangar K Area; however, land use controls will be implemented to limit the use of groundwater as drinking water source. In the long term, this remedy alternative will meet RAOs and will also allow re-evaluation to determine if the remedy is working and provide an opportunity for change, if necessary.

The 45th SW, USEPA, and FDEP have entered into a Memorandum of Agreement (MOA), which outlines how institutional controls will be managed at the 45th SW. The MOA requires periodic inspections, condition certification, construction project coordination, and agency notification. Site-specific details can be found in the Hangar U Land Use Control Implementation Plan (LUCIP).

EVALUATION OF REMEDY ALTERNATIVES

Each cleanup alternative was evaluated to determine how each potential remedy would comply with the four general standards for corrective measures. The four general standards for corrective measures are:

- Overall protection of human health and the environment;
- Attain media cleanup standards;
- Control the sources of releases; and
- Comply with standards for management of wastes

The second alternative (Land Use Controls) meets each of the above criteria, while the no action alternative remedy would not meet them.

LAND USE CONTROLS AGREEMENT

By separate MOA dated 23 December 1999, with USEPA and FDEP, CCAFS, on behalf of the Department of the Air Force, agreed to implement base-wide, certain periodic site inspection, condition certification, and agency notification procedures designed to ensure the

maintenance by installation personnel of any site-specific land use controls deemed necessary for future protection of human health and the environment. A fundamental premise underlying execution of that agreement was that through the USAF's substantial good-faith compliance with the procedures called for therein, reasonable assurances would be provided to the USEPA and FDEP as to the permanency of those remedies which included the use specific land use controls.

Although the terms and conditions of the MOA are not specifically incorporated or made enforceable herein by reference, it is understood and agreed by the USAF, USEPA, and FDEP that the contemplated permanence of the remedy reflected herein shall be dependent on CCAFS's substantial good-faith compliance with the specific land use control maintenance commitments reflected therein. Should such compliance not occur or should the MOA be terminated, it is understood that the protectiveness of the remedy concurred in may be reconsidered and that additional measures may need to be taken to adequately ensure necessary future protection of human health and the environment.

WHAT IMPACTS WOULD THE CLEANUP HAVE ON THE LOCAL COMMUNITY?

There would be no impacts to the surrounding communities because groundwater underlying the site is not used for potable. Additionally, residential use of the Hangar U Area is not occurring nor is it expected in the near future. As long as CCAFS remains an active gateway for the aerospace industry, Hangar U is expected to continue operating in an industrial capacity.

Land use controls will be put in place to ensure that workers are adequately protected when engaging in activities that require contact with groundwater and that construction activities do not cause contaminant re-distribution.

WHY DOES THE 45th SW IRP TEAM RECOMMEND THIS REMEDY?

The team recommends the proposed remedy because land use controls will prevent exposure to contaminants prior to the cleanup levels being achieved. Additionally, remediation of groundwater will be implemented in conjunction with SWMU No. 22, and will mitigate long term groundwater concerns. The proposed remedy meets the four general standards for corrective measures.

NEXT STEPS

The 45th SW IRP team will review all comments on this SB to determine if the proposed remedy needs modification prior to implementation and prior to incorporating the proposed remedy into the CCAFS HSWA permit. If the proposed remedy is determined to be appropriate for implementation, then the land use controls will be initiated and a LUCIP will be developed and incorporated into the MOA.



LAND USE CONTROL IMPLEMENTATION PLAN

HANGAR U SOLID WASTE MANAGEMENT UNIT 48 (SWMU NO. 48) 45TH SPACE WING CAPE CANAVERAL AIR FORCE STATION BREVARD COUNTY, FLORIDA

Facility Description

Hangar U, Solid Waste Management Unit 48 (SWMU No. 48) is located within the Cape Canaveral Air Force Station (CCAFS) Industrial Area on Hangar Road, north of Industry Road. The Hangar U Facility was originally constructed in 1957 for use as a Guided Missile Assembly Building, and operated directly by the U.S. Air Force (USAF). Launch vehicle related hardware was assembled at the facility. After a few years, Douglas Aircraft assumed management responsibilities at the site. Following the deactivation of the launch-related activities, the site was briefly used as a Base supply storage building until the early 1970s. The site has operated as a vehicle maintenance department since 1976. It should be noted that groundwater contamination underlying Hangar U is due to dissolved contaminants emanating from Hangar K (SWMU No. 22) in the industrial area.

Location

(Reference Site Map on last page of this document)

Site Plan Coordinate	Northing	Easting
North	1514130.68	791241.26
West	1513716.86	790950.40
South	1513260.48	791591.23
East	1513679.03	791.879.72

Objective

Implementation of site-specific land use controls to protect against exposure to contaminated soil and shallow groundwater and to prevent consumption of the shallow groundwater. The objectives for Hangar U will be achieved in conjunction with additional investigation and remediation of groundwater at Hangar K (SWMU No. 22). Groundwater land use controls at Hangar U will remain in place, until the groundwater contamination is successfully remediated under Hangar K.

Land Use Controls (LUCs) to be Implemented:

Administrative:

- The property will be prohibited from residential or other non-industrial development

LUCIP
HANGAR U (SWMU NO. 48)
CAPE CANAVERAL AIR FORCE STATION
OCT 2001

without prior written notification to the Florida Department of Environmental Protection (FDEP) and the United States Environmental Protection Agency (USEPA) concerning the SWMU land use change. Dependent on site conditions and the nature and intensity of the proposed land use change, additional site investigations and assessments could be required for the USAF. Based on these analyses, additional remedial measures may be required prior to land use change.

- Perform and document baseline LUC audit upon finalization of the Statement of Basis.
- Perform and document quarterly LUC compliance inspections in accordance with 45th SW LUC Operations Manual.
- Perform, document, and report an annual audit on LUC implementation, maintenance, and compliance in accordance with the 45th SW LUC Operations Manual and the current CCAFS Corrective Action Management Plan (CAMP).
- The property Land Use Control Implementation Plan (LUCIP) shall remain in effect until:
 - a) Changes to applicable Federal and State risk-based clean-up standards occur which indicate site contaminants no longer pose potential residential risk; or
 - b) Reduction in site contaminant concentrations to below Federal and State residential risk-based clean-up standards occurs.
- In the event of property realignment, transfer, or re-use for non-industrial or non-commercial purposes, assessment and remediation may be necessary to ensure that impacts to ecological receptors are not increased or to mitigate potential ecological impacts where residual contamination exists.

Soil:

- Soils will not be disturbed or moved during property development, maintenance or construction, without:
 - a) USAF review, coordination, and approval of the proposed construction/development plans via AF Form 103 (Base Civil Engineer Work Clearance Request), 332 (Base Civil Engineer Work Request), 813 (Request for Environmental Impact Analysis), or similar process;
 - b) Ensuring proper engineering controls are in-place so that unauthorized release or disposal of the affected media does not occur. This includes conducting appropriate testing and developing a disposal plan in accordance with the LUC Operations Manual prior to off-site disposal; and
 - c) Use of proper personal protection equipment by site workers, as determined by the project proponent's occupational health and safety advisor.
- The site will be posted with proper warning signs in accordance with the LUC Operations Manual and the CCAFS Hazardous and Solid Waste Amendments (HSWA) Permit.

LUCIP
HANGAR U (SWMU NO. 48)
CAPE CANAVERAL AIR FORCE STATION
OCT 2001

Groundwater:

- The consumptive use of the site's surficial aquifer groundwater will be prohibited.
- Incidental consumption and dermal exposure to groundwater from the surficial aquifer will be prevented. This will be addressed by the project proponent's health and safety advisor.
- Groundwater will not be contacted, pumped, or discharged during property development, maintenance, or construction, without:
 - a) USAF review, coordination, and approval of the proposed construction/development plans via AF Form 103 (Base Civil Engineer Work Clearance Request), 332 (Base Civil Engineer Work Request), 813 (Request for Environmental Impact Analysis), or similar process;
 - b) Ensuring proper engineering controls are in-place so that unauthorized release or disposal of the affected media (groundwater) does not occur. This includes conducting appropriate testing and developing a disposal plan in accordance with the LUC Operations Manual prior to any pumping or discharge of groundwater; and
 - c) Use of proper personal protection equipment by site workers, as determined by the project proponent's occupational health and safety advisor.
- The site will be posted with proper warning signs in accordance with the LUC Operations Manual and the CCAFS HSWA permit.

Statement of Basis:

The Statement of Basis (SB) is currently being reviewed. It is anticipated that the SB will be accepted/incorporated into the HSWA Permit, scheduled for issuance early in 2002.

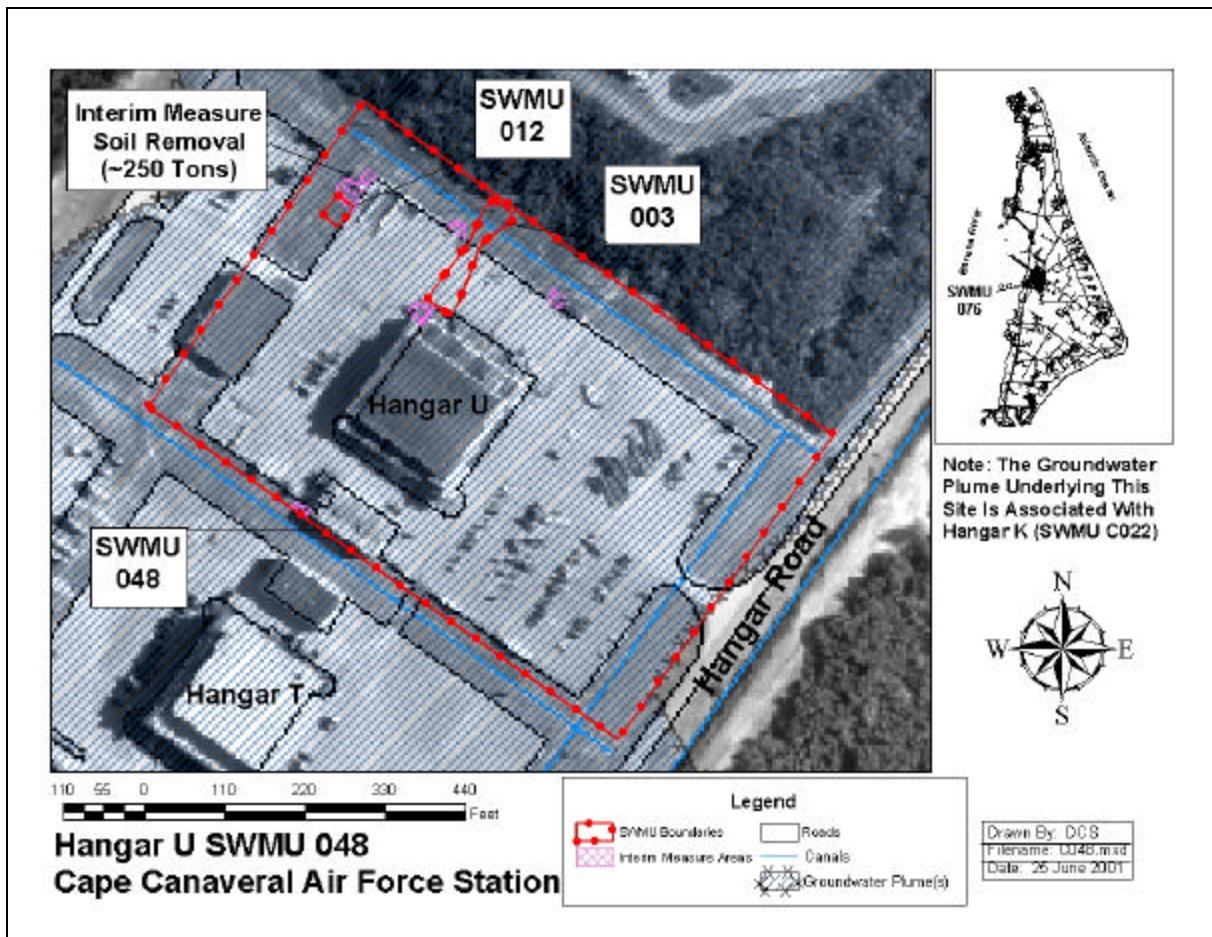
Additional Information:

Pertinent Document Reference:

RCRA Facility Investigation/Interim Measures Report and Site Assessment Report Addendum, Hangar U, SWMU No. 48, Parson Engineering Science, Inc., April 1999.

LUCIP
HANGAR U (SWMU NO. 48)
CAPE CANAVERAL AIR FORCE STATION
OCT 2001

Hangar U – Site Map



Please contact the 45 SW Installation Restoration Program Office to obtain additional information, including: the 45 SW Land Use Controls Operation Plan; the CCAFS HSWA Permit; a complete record of corrective actions at Hangar U; or other related documents, guidance, and regulations. The IRP office can be reached by phone at (321) 853-0965. Information can also be obtained via the IRP website at http://www.mission-support.org/45SW_IRP_EA